

PATENT ABSTRACTS OF JAPAN

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(54) ARRAY SEMICONDUCTOR LASER EDGE EXCITATION SOLID STATE LASER

(57)Abstract:

PURPOSE: To acquire a semiconductor laser excitation solid state laser which produces solid state laser output light effectively by providing an optical coupler which consists of a lens array and a second lens used as a focusing lens.

CONSTITUTION: An Nd:YAG laser is used as a solid state laser element 4. Diachronic coating is performed for one edge face and a resonator is formed of the face as an excitation surface and of an output mirror 5. The used array semiconductor laser 1 is composed of an array which is formed by wiring 20 active layer stripes 7 of 100 μ m width at 500 μ m interval. A condenser lens array 2 is composed of 20 distribution factor lenses of 500 μ m width and condenses and collimates each projection light from 20 stripes. Then, 20 laser beams are focused by a second lens 3 and superposed at one place for end excitation of a solid state laser element 4 which consists of Nd:YAG rod. A highly efficient solid state laser of good beam quality and high output can be realized in this way.



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